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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,810	12/26/2001	Graziano Servizi	U 013800-7	6950

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26 West 61 Street
New York, NY 10023

EXAMINER

SAXENA, AKASH

ART UNIT	PAPER NUMBER
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2128

DATE MAILED: 07/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/032,810

Applicant(s)

SERVIZI ET AL.

Examiner

Akash Saxena

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/11/02 6/1/04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

1. Claims 1-11 have been presented for examination based on the application filed on 26th December 2001.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. EP 00830868.6 filed on 29th December 2000.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure. The abstract contains legal phraseology like "said" and "means". Further, the phrase like "Figure 1" seem like grammatical error and does not have any relevance in the abstract. Further, the abstract is stated in claim 1 format and hence is objected to. MPEP states:

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. Claim 7 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

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Regarding Claim 7

Claim 7 discloses "updating on said temporal window the position of each individual ... in random manner" and claim 6 discloses "updating on said temporal window the position of each individual ... solely according to ... random elementary direction", which are similar limitation and dependent claim 7 does not further limit the claim 6.

5. A series of singular dependent claims is permissible in which a dependent claim refers to a preceding claim which, in turn, refers to another preceding claim.

A claim which depends from a dependent claim should not be separated by any claim which does not also depend from said dependent claim. It should be kept in mind that a dependent claim may refer to any preceding independent claim. In general, applicant's sequence will not be changed. See MPEP § 608.01(n).

Regarding Claim 11

Claim 11 is rejected because there is a break in the sequence of dependent claims as described above.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1, 2, 3, 6 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding Claim 1

The step of "assigning" discloses "each individual belonging to the first part said individual" is vague because of the grammatical error. Examiner is unclear whether

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applicant is trying to group the simulated individuals, or has some other intent since no other group of individuals is disclosed in the instant claim. Going forward group of individuals is understood as first group of individuals.

Regarding Claim 2

Claim 2 discloses "updating ... condition of movement according to ... its own condition of mobility". Examiner is unclear as to how "condition of movement" is different from "condition of mobility". Hence the claim is deemed vague and is having circular reference.

Regarding Claim 3

Claim 3 discloses "updating position of each individual belonging to second part of individuals (understood by examiner as second group)". Claim 3 is dependent of claim 1, but claim 1 does not disclose any second group (only first group). It is also unclear if all the steps of claim 1 are applied to the second group as well.

Regarding Claim 6

The step of "updating" is replete with punctuation errors. Examiner interprets the step of "updating" as follows (comma's added):

"updating (150) on said temporal window the position of each individual, belonging to first part of individuals, solely according to said first direction corresponding to a random elementary direction."

Regarding Claim 5

The step of "determining" is not present in the drawing (Fig.2). Further elements (350) (360) (370) are associated with the step of "updating" disclosed in parent claim 4 limitations. Hence, the limitation "phase of determining (350) (360) (370)" is vague

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and examiner believes that applicant is referring to the step of "updating" in this claim. Appropriate corrections are required.

Regarding Claim 8

The step of "updating" discloses, "moving the latter in the elementary direction" where there are no two subjects defined, hence using "latter" renders the claim vague.

- 7. The term "minimum distance" in claim 8 is a relative term, which renders the claim indefinite. The term " minimum distance " is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.**

Further, it is unclear from where is the "minimum distance" measured for each of the said destination areas. It is also unclear if it is minimum distance from each other or from the mobile individuals.

- 8. Regarding claim 10, the word "means" is preceded by the word(s) "defining said urban area by means of at least one means of transport" in an attempt to use a "means" clause to recite a claim element as a means for performing a specified function.**

However, since no function is specified by the word(s) preceding "means," it is impossible to determine the equivalents of the element, as required by 35

U.S.C. 112, sixth paragraph. See *Ex parte Klumb*, 159 USPQ 694 (Bd. App. 1967).

Further, the limitation defines two "means" phrases and it is unclear how the claim limitation should be read, making the claim vague.

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Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. Claims 1-11 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding Claim 1

Claim 1 is non-statutory, as a human being could manually perform the steps defined in the method above by metal process augmented with pencil and paper.

MPEP 2111 states:

In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969) (Claim 9 was directed to a process of analyzing data generated by mass spectrographic analysis of a gas. The process comprised selecting the data to be analyzed by subjecting the data to a mathematical manipulation. The examiner made rejections under 35 U.S.C. 101 and 102. In the 35 U.S.C. 102 rejection, the examiner explained that the claim was anticipated by a mental process augmented by pencil and paper markings. The court agreed that the claim was not limited to using a machine to carry out the process since the claim did not explicitly set forth the machine. The court explained that "reading a claim in light of the specification, to thereby interpret limitations explicitly recited in the claim, is a quite different thing from reading limitations of the specification into a claim, to thereby narrow the scope of the claim by implicitly adding disclosed limitations which have no express basis in the claim." The court found that applicant was advocating the latter, i.e., the impermissible importation of subject matter from the specification into the claim.)

Examiner respectfully suggest that the above rejection can be corrected by bringing the claims into technological arts by using phrases such as, "A computer implemented method of...". Claims 2-11 are rejected based on their dependency on claim 1.

To expedite a complete examination of the instant application the claims rejected under 35 U.S.C. § 101 (nonstatutory) above are further rejected as set forth below in anticipation of applicant amending these claims to place them within the four statutory categories of invention.

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over

GIDA¹ article “SimPed: Simulating Pedestrian Flows in a Virtual Urban Environment” by Bin Jiang (JI1 hereafter), in view of article “Multi-Agent Simulation: New Approaches to Exploring Space-Time Dynamics within GIS” by Michael Batty & Bin Jiang (JI2 hereafter).

Regarding Claim 1

J11 teaches method of simulating mobility in an urban area (J11: Pg.20 Para.2 Lines 4-5) by defining the urban area with plurality of nodes and movement along those nodes in at least one direction (J11: Pg.24 Para.2 Lines 6-12).

Further, J11 defines plurality of destinations for portion of urban area (J11: Pg.25 Para.4 Lines 6-7; Pg.27 Para.2 Lines 11-12).

Further, J11 teaches assigning a plurality of individuals in simulation (also referred as agents/turtles) a respective position (J11: Pg.23 Para.3 Lines 2-6). J11 teaches condition of mobility as defined in the specification (start/stop/variable speed) (J11: Pg.26 Para.1 Line 4; Table 1: Agents: Speed (up/down)).

Further, J11 anticipates assigning one or more destination areas to the first part of individuals (J11: Pg.25 Para.4 Lines 6-7; Pg.27 Para.2 Lines 11-12)

Further, J11 teaches assigning first direction of movement to random movement to for each individual (J11: Pg.25 Para.4 Lines 3-5).

Further, J11 teaches determining second direction of motion based on destination (walk-purposely) (J11: Pg.25 Para.4 Lines 3-5).

¹ Journal of Geographic Information and Decision Analysis (<http://www.geodec.org/>)

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Further, **J11** teaches updating the position of each individual belonging to the first part of individuals according to condition of mobility and second direction (**J11**: Pg.28 Para.2 Lines 1-2; Pg.26 Figure 4).

J11 does not teach determining second direction of motion based on first direction of movement (random).

J12 teaches first direction of movement (random) for going around obstacles (**J12**: Pg.11 Para 1 Lines 1-2; Equation (5)) and a second direction of movement based on the current position of individual, associated destinations (walking-purposefully) and avoiding obstacles (using random first direction of movement) (**J12**: Pg.12 Para.2 Lines 1-8; Pg.11 Para 1 Lines 1-2; Equation (5)(6)(7)).

It would have been obvious to one (e.g. a designer) of ordinary skill in the art at the time the invention was made to apply the teachings of **J12** to **J11** to simulate mobility in an urban area. The motivation would have been that **J12** & **J11** are analogous art solving the same problem and further, **J12** is the future work on **J11** by same inventor. Further, **J12** provides the details of visibility explorer (**J12**: Pg.20 Visual Fields: A Morphological Explorer), which **J11** discloses in his conclusion (**J11**: Pg.28 Para2 Lines 9-11). Further, **J12** combines the two movements (random & purposeful) to simulate the pedestrian more realistically which **J11** uses as separate modes (**J12**: Pg.28 Para.2; **J11**: Pg.27 Para 1-2).

Regarding Claim 2

J11 teaches that there can be various species of agent groups that can be constructed (**J11**: Pg.23 Para 3 Lines 2-5). Hence the first part of individuals can be updated separately. Further, **J12** teaches agents that are goal-oriented, proactive

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and purposeful & cognitive which can update their condition on mobility based on the own position of an agent and own condition of mobility (JI2: Pg.5 Table 1; Para1 Lines 7-10; Pg.8 Para 2).

Regarding Claims 3, 4 & 5

JI1 teaches that there can be various species of agent groups that can be constructed (JI1: Pg.23 Para 3 Lines 2-5). **JI2** teaches first direction of movement (random) for going around obstacles (JI2: Pg.11 Para 1 Lines 1-2; Equation (5)) and a second direction of movement based on the current position of individual, and associated destinations (walking-purposefully) using random first direction of movement (avoiding obstacles) (JI2: Pg.12 Para.2 Lines 1-8; Pg.11 Para 1 Lines 1-2; Equation (5)(6)(7)). Further, **JI2** teaches agents that are goal-oriented, proactive and purposeful & cognitive which can update their condition on mobility based on the own position of an agent and own condition of mobility (JI2: Pg.5 Table 1; Para1 Lines 7-10; Pg.8 Para 2). Hence, direction of movement for the second part of individuals can also be characterized the same way as done with the first part of individuals.

Regarding Claims 6 & 7

JI2 teaches assigning what-if scenarios to the frequency with which people (agents) visit different rooms (destinations) and impact of closing/making the rooms to make them more/less attractive. The concept of assigning the temporal window to the destinations is same as described by **JI2** (JI2: Pg.27 Para 2). Further, **JI2** teaches updating the position based on the random elementary direction (JI2: Pg.27 Para.2 Lines 3-6).

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Regarding Claims 8 & 9

Jl2 teaches assigning each destination area a minimum distance with respect to the agent position. Further, Jl2 teaches updating to move the agent in the direction of destination through systematic tracing step by step (Jl2: Pg.13 Para: 2; Pg.14 Para 1,2,3; Equations (8)(9)).

Regarding Claim 10

Jl1 also teaches pedestrians (agents) that have characteristics of variable speeds, heading & movement (Jl1: Pg.26 Table 1), hence satisfying the condition for means of transportation at a first speed.

Regarding Claims 11

Jl1 & Jl2 teach condition for mobility comprising, a first condition in which the position, speed and the direction are the same as means of transportation (Jl1: Pg.26 Table 1), a second condition in which the position of said individual remains unchanged (Jl2: Pg.8 Para.2 Lines 5-7), and third condition in which the individual moves between two nodes with a second speed of movement (Jl1: Pg.26 Table 1; Jl2: Pg.8 Para.2 Lines 5-7).

Remarks

11. All claims are rejected.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Akash Saxena whose telephone number is (571) 272-8351. The examiner can normally be reached on 8:30 - 5:00 PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jean R. Homere can be reached on (571)272-3780. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Akash Saxena
Patent Examiner, GAU 2128
(571) 272-8351

A handwritten signature in black ink, appearing to read 'AS', with the date '12/2/20' written below it.